



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,770	03/15/2004	Kazuhiko Kikuchi	016907-1615	8633
22428	7590	12/19/2005	EXAMINER	
FOLEY AND LARDNER LLP			LEUNG, PHILIP H	
SUITE 500			ART UNIT	
3000 K STREET NW			PAPER NUMBER	
WASHINGTON, DC 20007			3742	

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/799,770

Applicant(s)

KIKUCHI ET AL.

Examiner

Philip H. Leung

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9-26-2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 8-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 11-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election with traverse of Group I, claims 1-7 and 11-16 in the reply filed on 9-26-2005 is acknowledged. The traversal is on the ground(s) that the two groups are not in a species-species relationship as there is only a single basic embodiment disclosed. This is not found persuasive because the two groups of claims are both generally drawn to an induction heating device with different distinct inventive concept. That is Group I is directed to an inducting heating device with a coil having a predetermined characteristic frequency which is different from a range of frequencies of the control output whereas Group II is directed to an induction heating device with two coils with different inductances and frequencies. Therefore the two Groups of inventions can be considered as two distinct species of induction heating devices as they do not require each other for patentability.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 8-10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 9-26-2005.
3. The drawings filed 7-19-2004 are acceptable.
4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Art Unit: 3742

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-7 and 11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation “differs from a range of frequencies of voltage and current” in claims 1 and 11 is vague and indefinite. More specifically, it is not certain what “a range of frequencies” is as any frequency can be considered as within “a range of frequencies”. Furthermore, the limitation “a frequently used frequency” in claim 2 is also unclear as it is not known what frequency can be considered as “frequently used”. In claim 6, “the first and second coils” have no proper antecedent basis. Should the claim be dependent on claim 5 instead of “claim 4”? In regard to claim 11, the term “the predetermined characteristic frequency of the coil” at lines 13-14 has no proper antecedent basis as it is only claimed that “a core member with a predetermined characteristic frequency” at line 4. Clarification and correction are required.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 3742

8. Claims 1, 2, 4 and 11 as far as the claims are understood, are rejected under 35 U.S.C. 102(b) as anticipated by Verkasalo (US 4,675,487).

Verkasalo shows an induction heating device with a plurality of induction coils (30-1, 30-2, 30-N) each with its core member 20 for heating a n electrically conductive member (roller 10). It shows a control section (Figures 5 and 6) to supply power with a predetermined frequency to the coils. It teaches that the frequency to be supplied into the resonance circuit (formed with the induction coil) is either above or below the resonance frequency or frequencies of the resonance circuit including the induction heating coil (see Figures 1-7 and col. 2, lines 40-64 and col. 7, line 44 – col. 8, line 65). Therefore, the claimed “wherein the predetermined characteristic frequency of the coil differs from a range of frequencies of voltage and current that are output from the control section” as any frequency is within “a range of frequencies” as claimed. Similarly, any frequency can be considered as “frequently used” or not as claimed in claim 2.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 3742

10. Claims 3, 5-10 and 12-16, as far as the claims are understood and proper, are rejected under 35 U.S.C. 103(a) as being obvious over Verkasalo (US 4,675,487), in view of Yokozeki (US 6,573,485).

As set forth above, Verkasalo shows every feature except that the induction heating roller is not used in an image forming device. Yokozeki shows an induction heating roller in an image forming device is well known in the art. The image forming device including a roller HR with induction heating coils IC1, IC2, IC3 forming resonance circuit with capacitors C1, C2, C3 with different resonance frequencies to control the power to each coil (see Figures 1-14, col. 6, line 46 – col. 7, line 11 and col. 9, line 62 – col. 12, line 64). It would have been obvious to an ordinary skill in the art at the time of invention to modify Verkasalo to use its induction heating roller in an image forming device to increase its utilities, in view of the teaching of Yokozeki. The exact values of the frequencies, impedances and the core dimensions would have been a matter of engineering design expediency depending on the overall circuit and the load characteristics as taught by Verkasalo at col. 6, line 10 – col. 7, line 68.

11. Claims 3 and 7, as far as the claims are understood and proper, are further rejected under 35 U.S.C. 103(a) as being obvious over Yokozeki (US 6,573,485), in view of Verkasalo (US 4,675,487).

Yokozeki shows an induction heating roller in an image forming device is well known in the art. The image forming device including a roller HR with induction heating coils IC1, IC2, IC3 forming resonance circuit with capacitors C1, C2, C3 with different resonance frequencies to control the power to each coil (see Figures 1-14, col. 6, line 46 – col. 7, line 11

Art Unit: 3742

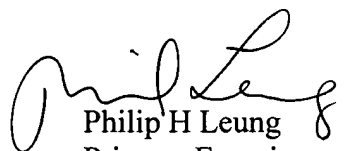
and col. 9, line 62 – col. 12, line 64). Therefore, Yokozeki shows the features of an image forming device as claimed except that it does not explicitly shows “the predetermined characteristic frequency of the coil differs from a range of frequencies of voltage and current that are output from the control section”. Verkasalo shows an induction heating device with a plurality of induction coils (30-1, 30-2, 30-N) each with its core member 20 for heating a n electrically conductive member (roller 10). It shows a control section (Figures 5 and 6) to supply power with a predetermined frequency to the coils. It teaches that the frequency to be supplied into the resonance circuit (formed with the induction coil) is either above or below the resonance frequency or frequencies of the resonance circuit including the induction heating coil (see Figures 1-7 and col. 2, lines 40-64 and col. 7, line 44 – col. 8, line 65). Therefore, the claimed “wherein the predetermined characteristic frequency of the coil differs from a range of frequencies of voltage and current that are output from the control section” as any frequency is within “a range of frequencies” as claimed. It would have been obvious to an ordinary skill in the art at the time of invention to modify Yokozeki to control the frequency of the control section power output so as to be different from the resonant characteristic frequency of the coils for better heating efficiency and reduce runaway risk, in view of the teaching of Verkasalo (see col. 7, lines 59-68).

Art Unit: 3742

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H Leung whose telephone number is (571) 272-4782.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (571) 472-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Philip H Leung
Primary Examiner
Art Unit 3742

P.Leung/pl
12-11-2005